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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,218	08/20/2001	Jeffrey S. Lille	SJO920000160US1	6404
36491	7590	11/02/2004	EXAMINER	
KUNZLER & ASSOCIATES 8 EAST BROADWAY SALT LAKE CITY, UT 84111			CHEN, TIANJIE	
			ART UNIT	PAPER NUMBER
			2652	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/933,218

Applicant(s)

LILLE, JEFFREY S.

Examiner

Tianjie Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 and 20-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-14 and 18 is/are rejected.
- 7) ☒ Claim(s) 15-17 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Final Rejection

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 11, 13, 14, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogawa et al (JP 4-221474A).

With regard to claim 11, Ogawa et al shows a micromechanical actuator in Figs. 1-8 for a storage device, including: a read/write slider 14; a movable member 13 (including 34 in Fig. 8) integrally coupled with the read/write slider; and an electro-thermal actuator element 20 (including 35 in Fig. 8) in contact with the movable member, to effect relative positioning of the read/write slider.

With regard to claim 13, Ogawa et al further shows that the movable member comprises a freestanding structure attached at one end to the read/write slider.

With regard to claim 14, Ogawa et al further shows the movable member further comprises a proximal end and a distal end, the proximal end integrally attached to the slider body and the distal end free-standing with respect to the slider body.

With regard to claim 18; Ogawa further shows that the electro-thermal actuator element further comprises an electro-thermal heater element 21 placed substantially on the movable member 34.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa et al in view of Foote et al (US 5,184,265) and Nakatani (US 6,391,216).

With regard to claim 12, Ogawa et al shows a micromechanical actuator with a movable member, but does not explicitly state that it is generally accepted reactive ion etchable material.

However, Foote et al shows a movable member, which is made of stainless steel (Column 6, lines 5-6); and Nakatani shows that stainless steel is reactive ion etchable material (Column 6, lines 37-50).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to use stainless steel as taught by Foote et al for the movable member arm. The rationale is as follows: Foote et al teaches using stainless steel for the movable member and it is also well known in the art that stainless steel is the most commonly used material for the movable member. One of ordinary skill in the art would have been motivated to use stainless for the movable member. As disclosed in Nakatani, the used stainless steel is reactive ion etchable.

Allowable Subject Matter

3. Claims 15-17 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

- With regard to claim 15, as the closest reference, Ogawa et al (JP 4-221474 A) shows a micromechanical actuator having a movable member; but **fails to show** that the movable member further includes a tongue-shaped region etched out of a face of a body of the read/write slider.
- With regard to claim 16, as the closest reference, Ogawa et al (JP 4-221474 A) shows a micromechanical actuator having a movable member; but **fails to show that** the movable member further includes an integral, elongated portion of the slider body defined at the distal end by a leading edge of the slider body, defined at a top end by the top of the slide body, defined at a bottom by a trench having the shape of a curved plane extending laterally through the slider body and extending from a first side member to a second side, the movable member attached at the proximal end to the slider body.
- With regard to claim 19, as the closest reference, Ogawa et al (JP 4-221474 A) shows a micromechanical actuator having a heater; but **fails to show that** the electro-thermal heater element comprises first and second leads extending in two substantially parallel directions on the movable member, the first lead extending along a first side of the movable member and the second lead extending along a second side of the movable member, the first lead being

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substantially narrower than the second lead such that passing a current through the electro-thermal heater element distorts the movable member to one side or the other in a selected manner depending upon the amount of current that is passed through the electro-thermal heater element.

- Applicant assumes that this device with these features would be capable of finely positioning slider of hard disk drive such that a read/write transducer can be quickly and accurately positioned over the centerline (Specification, p. 2, lines 17-19).

Response to Arguments

4. Applicant's arguments filed 07/12/2004 have been fully considered but they are not persuasive.

- In Ogawa, the movable member is integrally coupled to the slider. "Integrally coupled" is not necessary to be "formed the same block" as cited in this response p. 9, line 10.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and

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any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is (703) 305-7499. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tianjie Chen
TIANJIE CHEN
PRIMARY EXAMINER 10/25/2004